Name: _____

Problem Set 1.5: Bar Graphs and Histograms

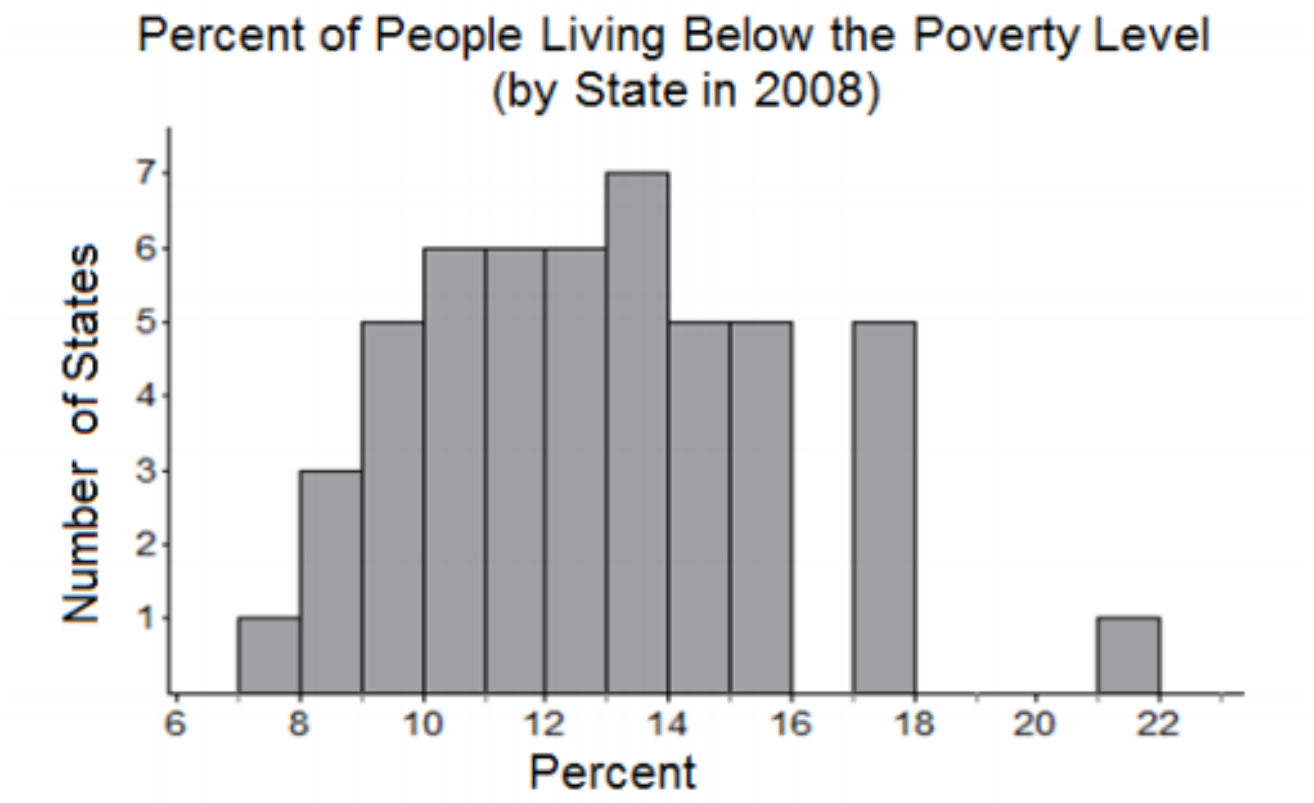
Note: For this problem set assume that histograms include the left endpoint of the interval and not the right.

1. The histogram below gives the percent of people living below the poverty level for each state in the US. In 2008, 13.2% of people in the US were living below the poverty level with Mississippi at 21.2% and New Hampshire at 7.6%.

a) In what interval of the histogram does Mississippi lie? Give your answer in double inequality notation.

b) Write a sentence that gives meaning to the tallest bar of the histogram.

c) What percent of states have a poverty level $\geq$ 17%?

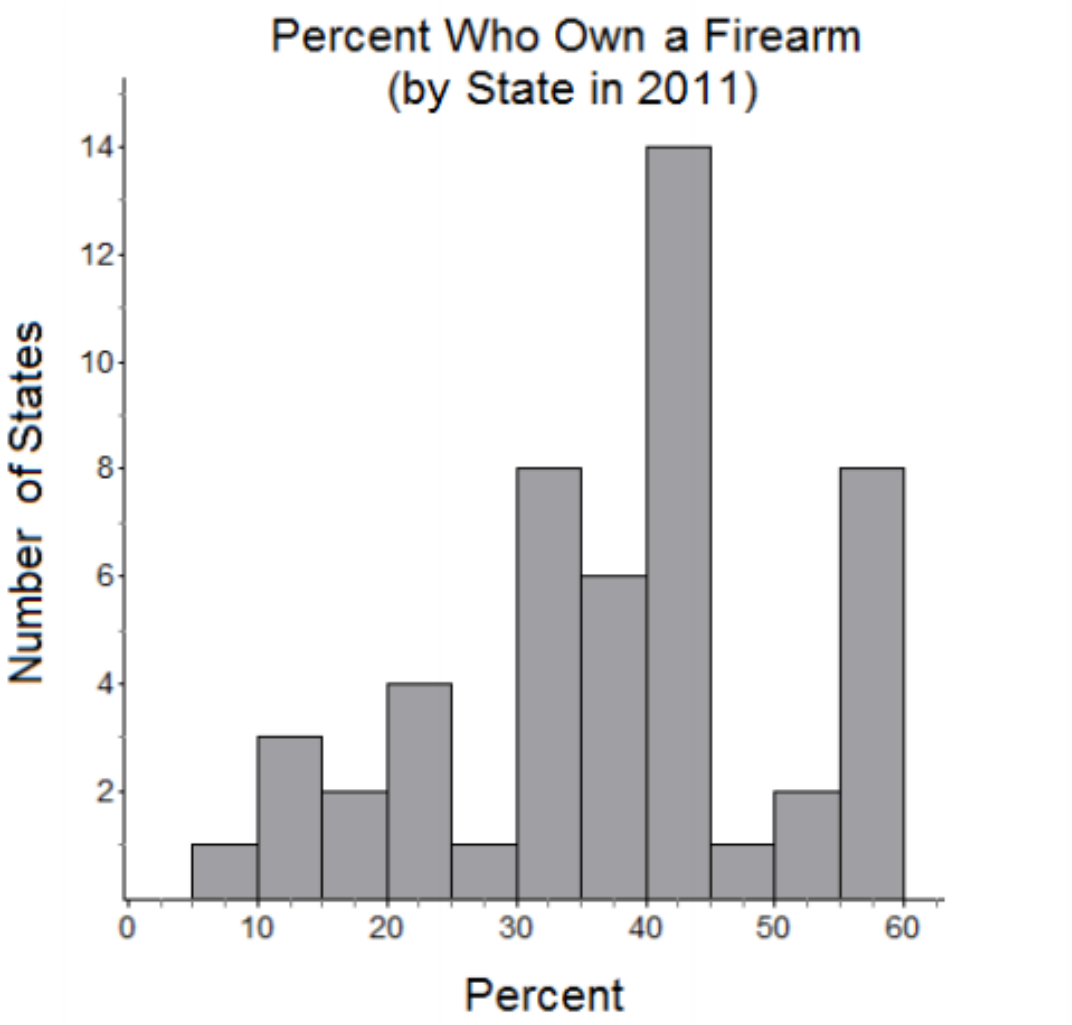


Source:Census Bureau, Poverty, http://www.census.gov/compendia/statab/2012/ranks/rank34.html, 12/26/11

2) The histogram below gives the percent of people who own a firearm for each state in the US.

a) If in a state exactly 30% of the population owned a firearm, in what interval would it lie? Give your answer in double inequality notation.

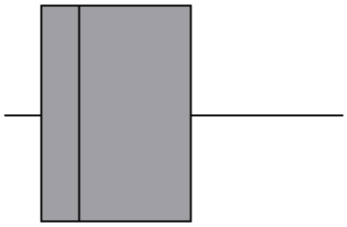
b) In what percent of states did at least 40% of their citizens own a firearm?

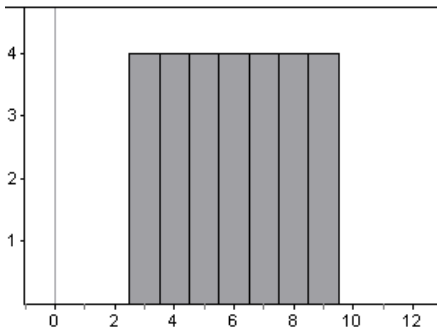


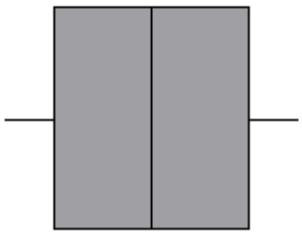
Source: NC Health Statistics, Firearms, http://www.schs.state.nc.us/SCHS/brfss/2001/us/firearm3.html, 12/26/2011

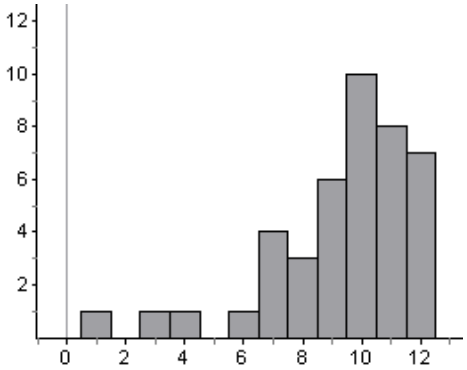
3. Three sets of data are displayed in both a box plot and a histogram. Use a line to match the box plot and histogram that have the same data.

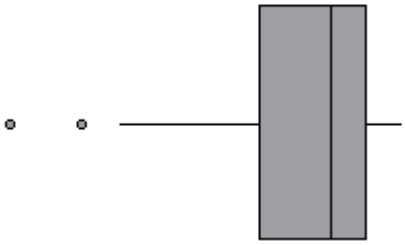
BOXPLOTS **HISTOGRAMS**

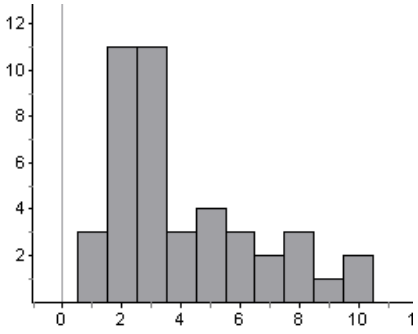






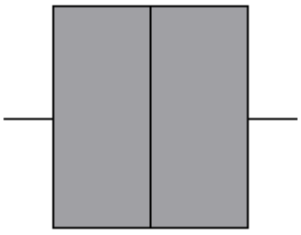




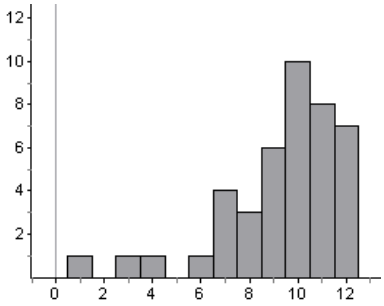


4. For each display, describe how the mean relates to the median (bigger, smaller, or the same).

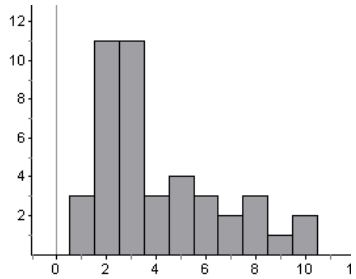
a)



b)



c)



5. ▪ Open the CODAP file called “US Health Ins. Coverage”.

a) Analyze the data for the variable “Percent Not Covered”. (Remember “Analyze the data” requires you to identify **shape, mean, 5 number summary, and outliers**.

b) Create a histogram for the variable “Percent not Covered”. What is the appropriate minimum and maximum bin width (there is no exact answer to this question)?

c) If your intention is to point out that Texas and Arizona have a problem with a high percentage of people not covered by health insurance, would you use the minimum or maximum bin width? Why?

6. ▪ Open the CODAP file called “Football Runs.”

a) Analyze the data.

b) If you were NMH and trying to downplay how well Dan Schribman did, what measure of center would you use and why?

c) What is an example of a bin width that does not make sense for these data?

d) What seems to be the optimal bin width for these data?